

Translation

PATENT COOPERATION TREATY

PCT/EP2003/009412



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 29571/WO/1	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP2003/009412	International filing date (day/month/year) 26 August 2003 (26.08.2003)	Priority date (day/month/year) 13 September 2002 (13.09.2002)
International Patent Classification (IPC) or national classification and IPC B60K 41/00		
Applicant DAIMLERCHRYSLER AG		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>6</u> sheets, including this cover sheet. <input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT). These annexes consist of a total of _____ sheets.
3. This report contains indications relating to the following items: I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input checked="" type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application

Date of submission of the demand 13 April 2004 (13.04.2004)	Date of completion of this report 01 December 2004 (01.12.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2003/009412

I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
 pages _____ 1-12 _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☒ the claims:
 pages _____ 1-14 _____, as originally filed
 pages _____, as amended (together with any statement under Article 19
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☒ the drawings:
 pages _____ 1/2, 2/2 _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2003/009412

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

- ☐ restricted the claims.
- ☒ paid additional fees.
- ☐ paid additional fees under protest.
- ☐ neither restricted nor paid additional fees.

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.
- ☒ not complied with for the following reasons:

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☒ all parts.
- ☐ the parts relating to claims Nos. _____

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: IV.3

Unity of the invention

This Authority has determined that the international application contains multiple inventions or groups of inventions which are not so linked as to form a single general inventive concept (PCT Rule 13.1), namely:

1. Claims 1 to 11:

Hybrid propulsion having a mechanism with multiple power-transmission paths, with checking of the correspondence between the measured values of the rotational speeds of the three planetary gear set elements

2. Claims 12 to 14:

Hybrid propulsion having a mechanism with multiple power-transmission paths, with generator control and motor control in dependence upon the speed ratio of the continuously variable transmission

Independent claim 12 is only optionally dependent on claim 1 ("more particularly" is not limiting).

The subject matter common to these two inventions is therefore a hybrid propulsion having a mechanism with multiple power-transmission paths and an internal combustion engine speed sensor and output speed sensor. This is already known from EP1219485 A (D1).

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	1-14	YES
	Claims		NO
Inventive step (IS)	Claims	1-14	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-14	YES
	Claims		NO

2. Citations and explanations**Claim 1: novelty and inventive step**

The first invention relates to a hybrid propulsion for motor vehicles having an internal combustion engine, an electric motor and a generator, and having a mechanism with multiple power-transmission paths which is disposed between the internal combustion engine, the generator and the electric motor and which has a gear input for the internal combustion engine, a gear input for the generator and a gear output for the electric motor, which motor is positively coupled to driven wheels of the motor vehicle via a drive train. All this is known from D1.

In D1, the speeds of the internal combustion engine, the generator and the electric motor are measured, or one of these is calculated via the planetary gear set equation.

In order to identify a defective speed sensor and to enable the vehicle to continue being driven even with a faulty sensor, it is proposed that the drive train speed used is a speed that can be verified from the above-mentioned measured values on at least two different paths that are mutually asymmetrically redundant.

It is not obvious to modify D1 so that the motor speed can be both measured and simultaneously calculated.

The present application therefore satisfies the requirements of PCT Article 33(1) to (3), because the subject matter of claim 1 is novel and involves an inventive step.

Claim 12: novelty and inventive step

D1 discloses the preamble of claim 12.

The generator or the internal combustion engine is controlled by means of its desired torque. In order that the mechanism with multiple power-transmission paths can be used as a continuously variable speed-transforming transmission, the second invention proposes that the generator and the electric motor be controlled by a control arrangement in dependence upon a setpoint/actual-value comparison of the ratio of the internal combustion engine speeds and the drive train speeds. That is not known in the prior art.

The present application therefore satisfies the requirements of PCT Article 33(1) to (3), because the subject matter of claim 12 is novel and involves an inventive step.

Claims 2 to 11 and 13, 14

Dependent claims 2 to 11 and 13, 14 concern developments of the subject matter of claims 1 and 12 respectively and therefore likewise satisfy the PCT requirements.